In the Claims:

Claims **1 to 40** (Canceled).

41. (New) An arrangement for determining loads on a fiber composite component, comprising:

a fiber composite component including plural fiber layers comprising a fiber composite material; and

at least one strain sensor unit, which strain sensor unit comprises a foil strain gage including a measuring grid covered with insulating layers on both opposite sides of said measuring grid, and which strain sensor unit further comprises electrical connecting pins electrically conductively connected to and extending perpendicularly from said measuring grid;

wherein:

said at least one strain sensor unit is respectively integrated into said fiber composite component in that said strain gage is sandwiched between at least one of said fiber layers on a first side of said strain gage and at least one of said fiber layers on a second side of said strain gage opposite said first side, and said connecting pins extend perpendicularly through and protrude outwardly from said at least one fiber layer on at least one of said sides of said strain gage so that respective contact portions of said connecting pins are externally accessible

for making electrical contact therewith outside of said fiber layers of said fiber composite component.

42. (New) The arrangement according to claim 41, wherein said at least one strain sensor unit comprises a plurality of said strain sensor units arranged at prescribed locations spaced apart from one another in said fiber composite component.

43. (New) The arrangement according to claim 41, wherein said strain gage respectively of said at least one strain sensor unit is sandwiched between said fiber layers approximately at a middle of a thickness of said fiber composite component adjacent to a bending-strain-neutral one of said fiber layers.

44. (New) The arrangement according to claim 41, further comprising insulating layers provided on said contact portions of said connecting pins, wherein said insulating layers are easily removable so as to allow external electrical connection to said contact portions.

45. (New) The arrangement according to claim 41, wherein said connecting pins each have a length of 5 to 50 mm and a diameter of 0.5 to 2 mm.

46. (New) The arrangement according to claim 41, further comprising fixed contact posts that lie in an insulated manner on an outer surface of an outermost one of said fiber layers, and that are electrically conductively mounted on said contact portions of said connecting pins, and that are adapted to serve for establishing a releasable electrical connection to an external electrical apparatus.

47. (New) The arrangement according to claim 41, further comprising an evaluating apparatus that is electrically conductively connected to said contact portions of said connecting pins, wherein said foil strain gage is adapted to provide via said connecting pins to said evaluating apparatus an electrical signal indicative of a strain value in said fiber composite component at a measuring location of said foil strain gage, and wherein said evaluating apparatus includes an electronic computing apparatus adapted to determine from said electrical signal a location-allocated strain value of said fiber composite component.

48. (New) The arrangement according to claim 47, wherein said evaluating apparatus is a load monitoring apparatus that further includes a memory adapted to store samples of said location-allocated strain value that varies over time.

49. (New) The arrangement according to claim 48, wherein said load monitoring apparatus further includes a comparator adapted to compare said samples of said location-allocated strain value to at least one load limit value, and a display or signaling arrangement adapted to display or signal an information indicative of damage danger or actual damage of said fiber composite component if at least one of said samples of said location-allocated strain value exceeds said at least one load limit value.

50. (New) The arrangement according to claim 47, wherein said evaluating apparatus is a testing apparatus adapted to couple said location-allocated strain value with data regarding test loads applied to said fiber composite component and based thereon to produce a loading or tension analysis of said fiber composite component being tested.

51. (New) The arrangement according to claim 47, wherein said electronic computing apparatus includes a processor adapted to evaluate said electrical signal with respect to at least one criterium selected from the group consisting of a probability, a prevalence distribution, a polarity and a time sequence, in order to determine said location-allocated strain value.

52. (New) The arrangement according to claim 47, wherein said electronic computing apparatus includes a processor, and

said evaluating apparatus further comprises an electrically shielded housing, an electrical power supply, an amplifier unit, an internal timer, and a data memory.

53. (New) The arrangement according to claim 47, further comprising an electrical device adapted to identify said measuring location of said foil strain gage in said fiber composite component, and wherein said electrical device is electrically connected and interposed between said evaluating apparatus and said contact portions of said connecting pins.

54. (New) A sensor element for determining strains in a fiber composite component, comprising a foil strain gage with a measuring grid, arranged between a carrier layer and an upper cover layer, connecting pins extending perpendicularly to the measuring grid and serving as electrical connection points, and strain relief elements formed of a material of the measuring grid respectively connected between ends of the measuring grid and the connecting pins, wherein the upper cover layer is formed of a same material as the carrier layer, and wherein the strain relief elements are adapted to relieve material strains from a fiber composite material of the fiber composite component so as to be adapted to prevent falsification of a resistance value measurement of the measuring grid by a strain-varied resistance influence of

an electrical supply connection through the connecting pins and the strain relief elements to the measuring grid.

55. (New) A sensor element for determining strains in a fiber composite component, comprising a foil strain gage with a measuring grid, arranged between a carrier layer and an upper cover layer, and connecting pins extending perpendicularly to the measuring grid and serving as electrical connection points, wherein the upper cover layer is formed of a same material as the carrier layer, and wherein outer surfaces of the carrier layer and of the upper cover layer are roughened by irradiation to be adapted to improve an adhesion of the outer surfaces with respect to fiber layers of the fiber composite component.

56. (New) A method of producing an arrangement for determining loads on a fiber composite component, comprising the steps:

a) laying at least one fiber layer comprising fiber material into a mold;

b) providing a polymeric material in or on said at least one fiber layer;

c) placing onto said at least one fiber layer, at least one sensor unit that comprises a foil strain gage including a measuring grid and that further comprises connecting pins electrically conductively connected to and extending perpendicularly from said foil strain gage;

d) covering said measuring grid respectively of said at least one sensor unit with at least one further fiber layer comprising fiber material such that said connecting pins protrude outwardly above said at least one further fiber layer;

e) providing a peel-off film on said at least one further fiber layer;

f) arranging a stamping pad of soft porous material above said peel-off film so as to receive respective outwardly protruding portions of said connecting pins;

g) pressing a layered stack including said stamping pad, said peel-off film, said at least one further fiber layer, said at least one sensor unit, said polymeric material, and said at least one fiber layer against said mold, wherein said pressing is achieved by a vacuum process or a pressure process, so as to form a solidified or rigidified fiber composite component having said foil strain gage integrated therein and having portions of said connecting pins protruding outwardly therefrom; and

h) removing said stamping pad.

[RESPONSE CONTINUES ON NEXT PAGE]